

Clean Version of Replacement Claims

1. A spring brake actuator for use in conjunction with a service brake actuator having a rotational operative shaft, the spring brake actuator having an actuator shaft in rotative communication with the service brake actuator shaft, characterized by

a clock spring or spiral spring, attached at its outer end to a spring brake actuator housing and mechanically charged at a rotation of the actuator shaft in a brake release direction,

an electric coil for keeping - when electrically energized - the clock spring in its charged condition, and

transfer means for transferring the rotative energy of the clock spring to the actuator shaft in a brake applying direction, when the coil is deenergized, but allowing free rotation of the shaft in either direction, when the coil is energized.

2. A spring brake actuator according to claim 1, characterized in that the transfer means include

a cylindrical hub, which is rotationally arranged in relation to the shaft and to which the inner end of the clock spring is attached,

a locking spring connecting the hub with the shaft, and

control means for controlling the operational condition of the locking spring in relation to the hub by means of the coil.

3. A spring brake actuator according to claim 2, characterized in that the control means include in axial order

a brake disc in proximity to the coil and in splines engagement with the hub, and

a control disc in internal engagement with the locking spring.

4. A spring brake actuator according to claim 1, characterized in that the locking spring is connected to the hub by means of a sleeve having a certain circumferential play in relation to the hub.

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5. A spring brake actuator according to claim 4, characterized in that the sleeve has a pin engaging a circumferential groove in the hub.

6. A spring brake actuator according to claim 1, characterized in that the transfer means include

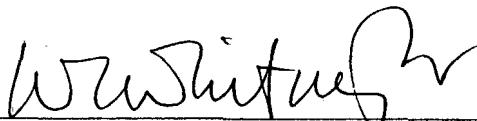
a cylindrical hub, which is rotationally arranged in relation to the shaft and to which the inner end of the clock spring is attached,

an axially movable brake disc in splines engagement with the hub, and

a tooth clutch between the actuator shaft and the brake disc, the clutch being engaged when the coil is not energized.

7. A spring brake actuator according to claim 6, characterized in that the tooth clutch is spring biassed into engagement.

Respectfully submitted,



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